
Subject: Re: bizarre number transformation
Posted by [Paul Van Delst\[1\]](#) on Fri, 26 Jul 2002 14:39:38 GMT
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James Kuyper wrote:

>
> Craig Markwardt wrote:
>>
>> James Kuyper <kuyper@gscmail.gsfc.nasa.gov> writes:
> ...
>>> The point is, that it's pretty rare to need that many significant
>>> digits. There aren't many real-world numbers that can be measured to
>>> within one part in a billion. Precision needs like that can come up in
>
> ...
> [some examples where such precision is needed]
>> Admittedly those are pretty specialized applications :-)
>
> Precisely. I also do scientific programming, where such needs are pretty
> common. But the vast bulk of the world's programming involves numbers
> that can be represented with adequate accuracy using single precision
> floating point. For instance, how many million-dollar quantities are
> actually measured with a precision of +/- \$1?

I would hope the answer is not any at all. I would think that 10th's of a US dollar/Euro (or even 100th's) would be used. Exchange rates are usually quoted to 1000th's of a US Dollar. This is all a hopeful thought on my part since my past and forecast number of million dollar transactions is, unfortunately, zero.

> And how many people would
> actually care if such quantities were in error by \$1 or two?

Depends how many transactions the error occurs in and whether it's a random or systematic error. These little bits can add up to a lot. Which is sort of what this whole thread is about in a way - cumulative numeric precision "errors".

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